Claims

1. A thermally tempered glazing of soda lime silica glass produced by tempering a pane of glass having a coefficient of thermal expansion greater than 93 x 10^{-7} per degree Centigrade and a Fracture Toughness of less than 0.72 $MPam^{1/2}$.

2. A thermally tempered glazing as claimed in claim 1 having a thickness of less than 3 mm.

3. A thermally tempered glazing as claimed in claim 1 or claim 2 wherein the glass has a coefficient of thermal expansion of at least 95 x 10^{-7} per degree Centigrade.

4. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has a Fracture Toughness of less than 0.70 $MPam^{1/2}$.

5. A thermally tempered glazing as claimed in any of the preceding claims wherein the coefficient of thermal expansion α per degree Centigrade and Fracture Toughness FT (in $MPam^{1/2}$) of the glass are such that

$$\frac{\alpha \times 10^7}{FT} \geq 135$$

6. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has an alkali metal oxide content greater than 15% by weight.

7. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has an alkali metal oxide content in the range 15 to 18% by weight.

8. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has a ferrous oxide content (calculated as ferric oxide) of at least 0.2% by weight.

9. A thermally tempered glazing as claimed in claim 8 wherein the glass has a ferrous oxide content (calculated as ferric oxide) of at least 0.3% by weight.

10. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has a magnesium oxide content of less than 2% by weight.

11. A thermally tempered glazing as claimed in any of the preceding claims wherein the glass has a content of alkaline earth metal oxide (other than magnesium oxide) of at least 9% by weight.

12. A thermally tempered glazing as claimed in any of the preceding claims having a thickness in the range 2.3 to 2.9 mm.

13. A laminated automotive glazing comprising at least one semi-tempered glass pane having a thickness in the range 1.5 mm to 2.5 mm, produced by semi-tempering a pane of glass as defined in any of claims 1 to 11.

14. A method of tempering a glazing comprised of glass as defined in any of claims 1 to 11 characterised by operating at a quench pressure at least 20% than the quench pressure required to temper a corresponding glazing of standard composition to the required standards under otherwise similar conditions.

15. A method as claimed in claim 14 wherever the quench pressure is at least 25% less than the quench pressure required to temper a corresponding glazing of standard composition to the required standards under otherwise similar conditions.

16. A method as claimed in claim 14 or claim 15 wherein the glazing is of float glass having a thickness in the range 3 mm to 5 mm.

17. A method as claimed in claim 16 wherein the quench pressures used range from not more than 12.5 kPa for 3 mm glass to not more than 5kPa for 5 mm glass.

18. A method as claimed in claim 17 wherein the quench pressures used range from not more than 10 kPa for 3 mm glass to not more than 5 kPa for 5 mm glass.

19 A method of tempering a glazing comprised of glass as defined in any of claims 1 to 11 characterised by operating at a quench pressure of not more than 12.5 kPa for 3mm glass.

20. A method of tempering a glazing comprised of glass as defined in any of claims 1 to 11 characterised by operating at a quench pressure of not more than 10 kPa for 4mm glass.

21. A method of tempering a glazing comprised of glass as defined in any of claims 1 to 11 characterised by operating at a quench pressure of not more than 6 kPa for 5mm glass.

22. A thermally tempered glazing of soda lime silica glass having a thickness of less than 3 mm, optionally being a glazing as claimed in any of claims 1 to 11, the glass being green glass containing at least 14.5% by weight Na_2O, at least 10.5% by weight CaO, at least 0.5% by weight total iron (measured as Fe_2O_3) and being substantially magnesium-free, the glass having a ferrous value (% ferrous) of at least 30%.

23. A laminated automotive glazing, optionally being a glazing as claimed in claim 13, comprising at least one semi tempered glass pane having a thickness in the range 1.5 mm to 2.5 mm, and being of green glass having a composition as specified in claim 18.

24. A method of tempering an automotive glazing, optionally being a method as claimed in any of claims 14 to 21, the automotive glazing being of glass having a composition as specified in claim 18 characterised by operating at a quench pressure 10% less, preferably 25% less than the quench pressure required to toughen a corresponding glazing of standard composition to the required standards under otherwise similar conditions.

25. A soda lime silica glass in sheet form of composition comprising, in percentages by weight

SiO_2	64 – 75%
Al_2O_3	0 – 5%
B_2O_3	0 – 5%
Alkaline earth metal oxide (other than MgO)	9 – 16%
Alkali metal oxide	15 – 18%
MgO	<2%
Total iron (calculated as Fe_2O_3)	≥0.05%

26. A soda lime silica glass as claimed in claim 25 of composition comprising, in percentages by weight:

SiO_2	67 – 73%
Al_2O_3	0 – 3%
B_2O_3	0 – 3%
Alkaline earth metal oxide (other than MgO)	10 – 14%
Alkali metal oxide	15 – 17%

27. A soda lime silica glass as claimed in claim 25 or 26 wherein the ratio of ferrous iron (calculated as ferric oxide) to total iron (calculated as ferric oxide) is less than 30%.

28. A soda lime silica glass as claimed in any of claims 25 to 27 having a thickness less than 2.8 mm.

29. A thermally tempered pane of soda lime silica glass of composition as claimed in any of claims 25 to 28.